

## ATH 914 – Nutrition for Sports

### *Independent Study Course Syllabus*

**Number of Units:** 3 Graduate Semester Units

**Target Grade Level:** 4<sup>th</sup> through 14<sup>th</sup> grade

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### Course Description

- Proper nutrition is essential for individuals who want to perform well in sport, maintain the benefits of fitness, reduce their risk of injury, and prevent nutrition-related diseases. During this course, participants will learn how easy it is for athletes to maintain a balanced and healthy diet. Participants will have the opportunity to maintain a diet record for an athlete and conduct a diet analysis. Through this analysis, coaches and teachers will first discover areas where diet improvements could occur. Next they will work with the athlete to create a diet plan that provides the recommended amounts of essential nutrients for optimal health and athletic performance. Many coaches and athletes feel that physical training is the only way to improve physical performance. However, there are several primary factors that influence a person's athletic performance. Nutrition along with a properly constructed physical training program might be the secret ingredient to optimizing athletic performance.
- Course assignments encourage participants to integrate specific national standards for physical education. Objectives for each lesson are modeled around standards-based learning as identified by SHAPE America. Evidence of learning is tied directly to stated objectives and is assessed via analysis and application papers, nutrition programs, reflective evaluations and peer learning. The course is designed for teachers and coaches of 4<sup>th</sup> through 14<sup>th</sup> grade students.
- Note: Students are required to purchase the textbook separately.

## Required Course Materials

- **Textbook:** Clark, N. (2014). Sports Nutrition Guidebook. (5th ed.). Champaign, IL: Human Kinetics is the course textbook. Students are expected to thoroughly read this book and will be asked to analyze the content and apply the suggested techniques to a sport and physical education situation.
- **Note:** Students are responsible for purchasing their own textbook, reading it thoroughly, and applying what they learned to the course assignments. You can order the book directly from the publisher, Human Kinetics, <http://www.humankinetics.com/products/all-products/Nancy-Clarks-Sports-Nutrition-Guidebook-5th-Edition> or from one of several discount aggregators (for example):
  - [www.isbns.net](http://www.isbns.net)
  - [www.amazon.com](http://www.amazon.com)
  - [www.google.com/products](http://www.google.com/products)
- **Course Packet:** The packet is divided into the following five sections: Section 1: General Information, Section 2: Course Information, Section 3: Course Assignments, Section 4: Course Bibliography, and Section 5: Instructor Biography and Course Evaluation.
- **Grade Request** – After you have completed all your coursework, you will need to request your grade via the instructions in the Course Packet.

## Course Dates

- This course is self-paced; students may enroll at any time and take up to one year to complete assignments.
- You have up to one year from the date of registration, and no less than three weeks (one week per credit), to complete the course.

## Course Requirements

### Students will be expected to:

- Read and apply the text, Sports Nutrition Guidebook to all assignments.
- Complete the Analysis and Application Papers based on the Sports Nutrition Guidebook textbook.
- Create a balanced Nutrition Program for a student athlete based on the information in the Sports Nutrition Guidebook textbook and the course packet.
- Maintain a one-day (either during the week or weekend) diet record and analysis. This record will include all food items and beverages consumed for that day. The analysis will provide an idea of the current status of the diet and areas for improvements.

- Try five of the approximately 50 different recipes outlined in the Sports Nutrition Guidebook textbook and write a reflection about his/her experience. This reflection will include the following information: a) reasons for choosing those 5 recipes, b) practicality of the recipes, and overall impression of each meal.
- Create a classroom lesson plan or a workshop outline/script on Sports Nutrition using the textbook and the references provided within the course packet. This assignment will be appropriate for the coach or teacher interested in presenting nutrition and/or sports nutrition information as part of a unit on nutrition to his/her colleagues during an in-service opportunity.
- Complete all assignments within the allocated timeframe – 1 year from enrollment date.
- Submit all typed coursework in the organized format described within the Schedule of Topics and Assignments section.
- Keep a copy of their coursework in the event something gets lost or destroyed in the mail.
- Complete the designated assignments for the B grade / Credit or A grade option.

### Student Learning Objectives (SLOs)

<b>Student Learning Outcomes in this Course</b> Student will be able to:	<b>SHAPE America National Standards Addressed*</b>	<b>Continuing Education Program Student Learning Outcomes Addressed**</b>
1. Identify and integrate standards into many aspects of their teaching and coaching as demonstrated through their coursework.	2, 3, 4	1, 2, 3, 4, 5
2. Describe their role in shaping their student athletes to become “physically educated students”.	1, 2, 3, 4, 5	1, 2, 5
3. Understand the best foods and hydration before, during, and after exercise and competition.	2, 3, 5	2, 3, 5, 6
4. Create a nutritionally balanced diet in spite of limited time, budget, and cooking skills.	1, 2, 3	2, 4, 6
5. Explain the rationale for the consumption of high carbohydrate foods to enhance performance during exercise and competition.	2, 3, 5	2, 3, 5, 6
6. Understand dietary methods for reducing the risk of heart disease, diabetes, osteoporosis, and cancer.	2, 3, 5	2, 3, 5, 6
7. Record and analyze the diet of your student athletes.	2, 3	1, 2, 4, 6

8. Distinguish between safe and effective dietary supplements and those that lack scientific evidence for their benefits.	2, 3, 5	2, 3, 5, 6
9. Appreciate the human body and its ability to perform physical activity.	1, 2, 3, 4, 5	2, 3, 4, 5

\* Please refer to the section on **National Standards Addressed in This Course**

\*\* Please refer to the section on **Continuing Education Program Student Learning Outcomes**

## National Standards Addressed in This Course

**“Standards are an enduring commitment, not a passing fancy.”**

-California State Board of Education

### National Board for Professional Teaching Standards (NBPTS) ([www.nbpts.org](http://www.nbpts.org))

NBPTS was created in 1987 after the Carnegie Forum on Education and the Economy’s Task Force on Teaching as a Profession released A Nation Prepared: Teachers for the 21<sup>st</sup> Century. The five core propositions form the foundation and frame the rich amalgam of knowledge, skills, dispositions and beliefs that characterize National Board Certified Teachers (NBCTs). Course assignments have been designed so students can demonstrate excellence against these professional teaching standards whenever possible.

- Teachers are committed to students and their learning
- Teachers know the subject they teach and how to teach those subjects to students
- Teachers are responsible for managing and monitoring student learning
- Teachers think systematically about their practice and learn from experience
- Teachers are members of learning communities

### National Physical Education Standards by SHAPE America ([www.shapeamerica.org/standards/pe/index.cfm](http://www.shapeamerica.org/standards/pe/index.cfm))

The following content standards defined by SHAPE America specify what students should know and be able to do as result of a quality physical education program. States and local school districts across the country use the National Standards to develop or revise existing standards, frameworks and curricula. Participants are asked to apply these standards in their teaching practices and demonstrate them within their coursework.

- SHAPE 1 - The physically literate individual demonstrates competency in a variety of motor skills and movement patterns.
- SHAPE 2 - The physically literate individual applies knowledge of concepts, principles, strategies and tactics related to movement and performance.
- SHAPE 3 - The physically literate individual demonstrates the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness.
- SHAPE 4 - The physically literate individual exhibits responsible personal and social behavior that respects self and others.
- SHAPE 5 - The physically literate individual recognizes the value of physical activity for health, enjoyment, challenge, self-expression and/or social interaction.

## **Common Core State Standards** ([www.corestandards.org](http://www.corestandards.org))

The Common Core State Standards provide a consistent, clear understanding of what students are expected to learn, so teachers and parents know what they need to do to help them. The standards are designed to be robust and relevant to the real world, reflecting the knowledge and skills that our young people need for success in college and careers. With American students fully prepared for the future, our communities will be best positioned to compete successfully in the global economy.

### **College and Career Readiness Anchor Standards for Reading**

The grades 6–12 standards on the following pages define what students should understand and be able to do by the end of each grade span. They correspond to the College and Career Readiness (CCR) anchor standards below by number. The CCR and grade-specific standards are necessary complements—the former providing broad standards, the latter providing additional specificity—that together define the skills and understandings that all students must demonstrate.

#### **Key Ideas and Details**

- Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
- Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
- Analyze how and why individuals, events, or ideas develop and interact over the course of a text.

#### **Craft and Structure**

- Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.
- Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.
- Assess how point of view or purpose shapes the content and style of a text.

#### **Integration of Knowledge and Ideas**

- Integrate and evaluate content presented in diverse formats and media, including visually and quantitatively, as well as in words.
- Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.
- Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.

- Read and comprehend complex literary and informational texts independently and proficiently.

## **Continuing Education Program Student Learning Outcomes**

- CE 1 - Demonstrate proficient written communication by articulating a clear focus, synthesizing arguments, and utilizing standard formats in order to inform and persuade others, and present information applicable to targeted use.
- CE 2 - Demonstrate comprehension of content-specific knowledge and the ability to apply it in theoretical, personal, professional, or societal contexts.
- CE 3 - Reflect on their personal and professional growth and provide evidence of how such reflection is utilized to manage personal and professional improvement.
- CE 4 - Apply critical thinking competencies by generating probing questions, recognizing underlying assumptions, interpreting and evaluating relevant information, and applying their understandings to the professional setting.
- CE 5 - Reflect on values that inspire high standards of professional and ethical behavior as they pursue excellence in applying new learning to their chosen field.
- CE 6 - Identify information needed in order to fully understand a topic or task, organize that information, identify the best sources of information for a given enquiry, locate and critically evaluate sources, and accurately and effectively share that information.

## **Schedule of Topics, Assignments, and Activities**

This section of the syllabus describes exactly what material the participant must cover and in what sequence. Assignments and activities are integrated with the topics to show the relationship between learning and practice within a standards-based learning environment.

- **Analysis and Application Papers**

The “Analysis and Application” papers address issues related to sports nutrition presented in the [Sports Nutrition Guidebook](#). Each paper will be 3 to 4 pages and include two sections: analysis (discussing the major points presented in the chapter) and application (applying the major points to a sport-training program).

The Analysis and Application papers are the primary mechanism by which you will provide evidence of the following: a) You have read and understood the major points of each specific reading assignment, b) You are able to apply what you have learned in a practical way to enhance a sport training program, and c) You are able to integrate the course material with your own personal experiences involving nutrition with regards to sport training programs.

- **Nutrition Program**

Based on the information presented in the text, the participant will create a balanced nutritional program for a student athlete. Be sure to consider any unique needs of the sport,

athletic team, and student athlete when creating this diet. This nutrition program will be created for a one week time period and will include foods that the athlete enjoys to eat or is willing to try.

The Nutrition Program will serve as a tool for you to put the nutrition principles presented in your textbook into practice. This exercise is extremely valuable for any teacher or coach who truly desires to improve the health and performance of his/her student athletes. After reading the required chapters, you will know the basic principles involved in designing a healthy nutrition program for your students or athletes.

- **Nutrition Assessment**

This assignment allows you to maintain a one-day diet record of all the foods and beverages that you consume and then generate an analysis using the charts provided in the packet or through one of several free Internet sites listed in the Course Bibliography - Internet Sites section of this packet. Tables for this assignment can be found within your course packet.

This analysis will provide information on the current status of your diet and will show you the areas where improvements can be made. It will also give you a tool you can use to assess the diets of your athlete's so that they can make informed dietary changes to achieve optimal health and performance.

- **Reflection on Recipes**

In this assignment you will select and try 5 of the approximately 50 different recipes included in your textbook. You will then reflect on the palatability, practicality and your general overall experience in trying the recipe.

This assignment is designed to reinforce the principles covered in this course. By taking a little time to reflect on healthy recipes, you should see how certain food items could be worked into an overall healthy nutrition program. The goal is to increase your appreciation for healthy foods and the role that they play in optimal sport performance.

- **Sports Nutrition Lesson Plan**

Using the textbook and the references provided, create a classroom lesson plan or a workshop outline/script on Sports Nutrition. This assignment will be appropriate for the coach or teacher interested in presenting this information as part of a unit on nutrition or to his/her colleagues during an in-service opportunity.

This assignment will help the participant develop a general teaching strategy for a lesson that can be part of a unit/workshop on nutrition or sports nutrition. A teaching strategy is a technique used by a teacher or coach to help a student or individual to understand a particular concept, and/or develop and practice a specific life skill. The participant will create a teaching strategy that contains: 1) clever title for the lesson or workshop, 2) grade level or target audience, 3) the desired outcomes of the lesson or workshop, 4) the

materials needed for the lesson or workshop, and 5) teaching steps or workshop outline. If possible the participant should also include information on multicultural issues. All assignments will have an appendix that contains the teaching aids, overhead masters, handout master, etc. that are necessary for the teaching strategy. This assignment will allow the participant to use the information learned to design a meaningful lesson or workshop on general nutrition or sports nutrition.

## Technology Requirements

### Email Communication

I encourage email communication, but require that the subject line of all emails contain the course number/name and your name. For example: "ATH 914 - Andy Herrick". For security purposes, emails sent without any subject in the subject line will not be opened.

### Plagiarism and Academic Honesty

All people participating in the educational process at Fresno Pacific University are expected to pursue honesty and integrity in all aspects of their academic work. Academic dishonesty, including plagiarism, will be handled according to the procedures set forth in the Fresno Pacific University Catalogue. URL <http://www.fresno.edu>

### Evidence of Learning

#### Evidence that the student achieved the course objective includes:

- Course instructor observed evidence of understanding of course objectives as demonstrated through student's analysis and reflective writing assignments.
- Course instructor observed evidence of understanding of course objectives as demonstrated through student's presentation of a nutrition program.
- Student demonstrated insightful thinking by analyzing the strengths and weaknesses of their nutrition program.
- Student demonstrated their understanding of assessing their student athlete's nutritional needs around optimal digestion ratios, quantities of energy nutrients/vitamins/minerals, and ideal electrolyte and fluid consumption for any sport.
- Student demonstrated their understanding of appropriate hands-on methods of teaching through their lesson plan or workshop teaching experience.
- Student included the use of higher level thinking skills to make connections to professional coaching and teaching standards from SHAPE America.
- Student demonstrated how they might use professional coaching and teaching standards from SHAPE America in their future teaching and coaching principles, strategies, and techniques.

## Grading Policies and Rubrics for Assignments

Course participants have the option of requesting a letter grade (A-grade or B-grade) or a Credit / No Credit when submitting the online grade form. Students will submit their grade request when all coursework has been completed.

The participant's grade will be determined by the quality and number of assignments they choose to complete. Each assignment outlined in the course packet includes a rubric which clearly describes the expectations for the course assignment. The discernment between an A or a B grade is at the discretion of the instructor based on the quality of work submitted. Any assignment falling below the "B-grade" or "Credit-grade" quality (below 80%) threshold will be returned to the participant with further instructions.

Outlined below are the assignment requirements for each type of grade option.

- Four assignments - All coursework must receive "B-grade" or better for participants who are working for the "B letter grade" or "Credit" option.
- Six assignments - All coursework must receive "A-grade" or better for participants who are working for the "A letter grade" option.

### **B Letter Grade or Credit - (All coursework must receive B-grade or better for this option)**

- \_\_\_ Complete two (2) Analysis and Application Paper
- \_\_\_ Complete the Nutrition Program
- \_\_\_ Complete only one (1) of the following:
  - \_\_\_ Nutrition Assessment
  - \_\_\_ Reflection on Recipes
  - \_\_\_ Sports Nutrition Lesson Plan

### **A Letter Grade - (All coursework must receive A-grade or better for this option)**

- \_\_\_ Complete three (3) Analysis and Application Papers
- \_\_\_ Complete the Nutrition Program
- \_\_\_ Complete only two (2) of the following:
  - \_\_\_ Nutrition Assessment
  - \_\_\_ Reflection on Recipes
  - \_\_\_ Sports Nutrition Lesson Plan

## Final Grading and Transcripts

- Upon completion of all course assignments and activities, students will need to submit an online request for final course grade by logging into <http://ce.fresno.edu/cpd>.
- Transcripts may be ordered online after you receive your blue official computer-generated Grade Report. Refer to the current Independent Study Policy Statement provided to you by your instructor, or on the CPD website (<http://ce.fresno.edu/cpd>) for further information.

## References - Books/Articles

- Benardot, D. (2005). *Advanced Sports Nutrition*. Champaign, IL: Human Kinetics.
- Burke, L. (2007). *Practical Sports Nutrition*. Champaign, IL: Human Kinetics.
- Burke, L. (2009). *Clinical Sports Nutrition*. New York: McGraw-Hill.
- Cardwell, G. (2006). *Gold Medal Nutrition*. (4<sup>th</sup> ed.). Champaign, IL: Human Kinetics.
- Eberle, S.G. (2007). *Endurance Sports Nutrition* (2<sup>nd</sup> ed.). Champaign, IL: Human Kinetics.
- Fink, H.H., Burgoon, L., & Mikesky, A. (2008). *Practical Applications In Sports Nutrition* (2<sup>nd</sup> ed.). Sudbury, MA: Jones and Bartlett Publishers.
- Jeukendruo, A. & Gleeson, M. (2009). *Sport Nutrition*. (2<sup>nd</sup> ed.). Champaign, IL: Human Kinetics.
- Manore, M. (2000). *Sport Nutrition for Health and Performance*. Champaign, IL: Human Kinetics.
- Ryan, M (2007). *Sports Nutrition for Endurance Athletes*. Boulder, CO: VeloPress.
- Thompson, J. (2010). *Science of Nutrition*. (2<sup>nd</sup> ed.). Old Tappan, NJ: Benjamin Cummings.
- Volpe, S.L. (2007). *Fitness Nutrition for Special Dietary Needs*. Champaign, IL: Human Kinetics.

## References - Websites

The Internet contains a wealth of information. By accessing the Internet you can gain a new perspective on many topics. The following web sites will help you explore the world of sports nutrition.

### The American Dietetic Association

[www.eatright.org](http://www.eatright.org)

Two areas of this all-around site really stand out: “Nutrition Resources”, which is full of nutrition fact sheets and articles, and “In the News”, which provides additional information about nutrition stores. You can also use this site to find a local dietitian.

### Food and Nutrition Information Center

<http://fnic.nal.usda.gov>

The USDA Food and Nutrition Information Center web site contains a wealth of information about all aspects of food and nutrition. You can access government reports as well as easy to understand information on food safety, the food guide pyramid, and food composition.

### **Mayo Clinic Nutrition Center**

[www.mayoclinic.com/health/nutrition-and-healthy-eating/MY00431](http://www.mayoclinic.com/health/nutrition-and-healthy-eating/MY00431)

Not only does this web site contain up-to-date information on nutrition topics in the headlines, but also has a virtual cookbook that helps you turn your recipes into healthy masterpieces. It also includes a comprehensive library of diet and nutrition information, a place to sign up for e-mail notices, links to other diet and nutrition organizations and a place to search for recipes by food item.

### **Arbor Nutrition Guide**

[www.arborcom.com](http://www.arborcom.com)

This site tackles the many different ways to study nutrition and explains them through a comprehensive set of links. Categories cover food service and safety, food science, nutrition education and food composition. You may want to try the “click here if you need explanation” option from the main page for quick summaries of the category grouping.

### **Eating Well Magazine Online**

[www.eatingwell.com](http://www.eatingwell.com)

This magazine is a great resource of delicious, low-fat recipes.

### **Cooking Light Magazine Online**

[www.cookinglight.com](http://www.cookinglight.com)

Another excellent resource for anyone who is interested in eating a healthy diet.

### **Children and Nutrition**

[www.nutritionexplorations.com](http://www.nutritionexplorations.com)

This site offers nutrition education activities for kids, as well as information for parents, teachers, and school food service staff about ways to improve children's eating practices.

### **International Food Information Council Foundation**

[www.foodinsight.org](http://www.foodinsight.org)

The IFIC Foundation is an industry-backed, nonprofit organization. Its Web site is useful for reporters, teachers, and those who want to eat in good health. The Food Safety and Nutrition Information section offers material on adult and adolescent nutrition, food additives, pesticides, allergies, and food safety. Press releases, information for educators and extensive lists of useful addresses are also available.

### **The Blonz Guide**

[www.blonz.com](http://www.blonz.com)

Want to get healthy? Ed Blonz, with a doctorate in nutrition and six books to his credit, offers this massive treasury of his healthy wandering around the Web. The site's wide array of links will put you in touch with the American Egg Board, Frito-Lay, grant-giving organizations and

other popular nutrition Web sites. Dr. Blonz's food and nutrition books are also available through this site.

### **National Strength and Conditioning Association**

[www.nscs.com](http://www.nscs.com)

As the worldwide authority on strength and conditioning, we support and disseminate research-based knowledge and its practical application to improve athletic performance and fitness.

### **SHAPE America**

[www.shapeamerica.org](http://www.shapeamerica.org)

The vision of SHAPE America is "Healthy People – Physically Educated and Physically Active!" SHAPE America is the largest organization of professionals involved in school-based health, physical education and physical activity, who are dedicated to teaching and promoting active, healthy lifestyles. Founded in 1885, SHAPE America provides a comprehensive array of resources, leadership in the development of standards and guidelines, professional development and advocacy for its members as well as the general public. SHAPE America's mission is to advance professional practice and promote research related to health and physical education, physical activity, dance, and sport.

### **Sports Fitness Advisor**

[www.sport-fitness-advisor.com](http://www.sport-fitness-advisor.com)

Sport Fitness Advisor's endeavor is to deliver, usable sports training tips, programs and workouts for enthusiastic athletes. On this website you'll find a section on each of the major components of fitness: strength training, power training, speed training, plyometrics, body composition, endurance training, and flexibility training.

### **Athletes' Acceleration**

[www.completespeedtraining.com](http://www.completespeedtraining.com)

Athletes' Acceleration is a performance enhancement company whose mission is to improve the knowledge base of motivated coaches and athletes in order to improve athletic performance. Through articles, DVDs, manuals, interviews with top specialists in the sports performance industry, this website provides coaches with the most up-to-date training principles required to successfully develop and maximize the overall athletic ability of each athlete.

### **Human Kinetics**

[www.humankinetics.com](http://www.humankinetics.com)

Human Kinetics is an information leader in delivering innovative books, DVDs, and programs for coaching and fitness professionals. Human Kinetics is committed to providing quality informational and educational products in the physical activity and health fields that meet the needs of their diverse customers. We are committed to not only providing information, but

whenever possible to providing solutions that help our customers practice their professions better and live healthier, more enjoyable lives.

## FRESNO PACIFIC UNIVERSITY STUDENT LEARNING OUTCOMES

<b>Student Learning Outcomes Oral Communication:</b> Students will <i>exhibit</i> clear, engaging, and confident oral communication – in both individual and group settings – and will critically <i>evaluate</i> content and delivery components.
<b>Written Communication:</b> Students will <i>demonstrate</i> proficient written communication by <i>articulating</i> a clear focus, <i>synthesizing</i> arguments, and utilizing standard formats in order to <i>inform</i> and <i>persuade</i> others.
<b>Content Knowledge:</b> Students will <i>demonstrate</i> comprehension of content-specific knowledge and the ability to apply it in theoretical, personal, professional, or societal contexts.
<b>Reflection:</b> Students will <i>reflect</i> on their personal and professional growth and <i>provide evidence</i> of how such reflection is utilized to manage personal and vocational improvement.
<b>Critical Thinking:</b> Students will <i>apply</i> critical thinking competencies by <i>generating</i> probing questions, <i>recognizing</i> underlying assumptions, <i>interpreting</i> and <i>evaluating</i> relevant information, and <i>applying</i> their understandings to new situations.
<b>Moral Reasoning:</b> Students will <i>identify</i> and <i>apply</i> moral reasoning and ethical decision-making skills, and <i>articulate</i> the norms and principles underlying a Christian world-view.
<b>Service:</b> Students will <i>demonstrate</i> service and reconciliation as a way of leadership.
<b>Cultural and Global Perspective:</b> Students will <i>identify</i> personal, cultural, and global perspectives and will employ these perspectives to <i>evaluate</i> complex systems.
<b>Quantitative Reasoning:</b> Students will accurately <i>compute</i> calculations and symbolic operations and <i>explain</i> their use in a field of study.
<b>Information Literacy:</b> Students will <i>identify</i> information needed in order to fully understand a topic or task, <i>explain</i> how that information is organized, <i>identify</i> the best sources of information for a given enquiry, <i>locate</i> and critically <i>evaluate</i> sources, and accurately and effectively <i>share</i> that information.